New England Bioassay

A Division of GZA

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

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NEW ENGLAND BIOASSAY A DIVISION OF GZA
CHRONIC AQUATIC TOXICITY TEST REPORT

Permitee: Patriot Beverages NPDES # MA0004936
Report submitted to: 20 Harvard Road
Littleton, MA 01460
Sample ID: Outfall 001
Test Month/Year: April 2019
NEB Proj # 05.0044697.00

Test Type / Method: *Pimephales promelas* Modified Chronic Static-Renewal Freshwater Test Method 1000.0; EPA 821-R-02-013

Effluent Sample Dates: #1 4/14-15/19 #2 4/16-17/19 #3 4/18-19/19

Test Start Date: 4/15/19

Results Summary

Your results were as follows:

Passed all permit limits

Acute Test Results

Species	LC50	A-NOEC	Permit Limit	Pass / Fail
Pimephales promelas	>100%	100%	≥ 100%	Pass

Chronic Test Results

Species	C-NOEC	C-LOEC	IC25	Permit Limit	Pass/Fail
Pimephales promelas	100%	>100%	>100%	≥ 91%	Pass

Data Qualifiers affecting this test:

Certifications & Approvals: NH ELAP (2071), NJ DEP (CT405)

Test Report Certification

Permittee name:	Patriot Beverages	Permit number:	MA0004936
Client sample ID:	Outfall 001	Test Start Date:	4/15/19

Whole Effluent Toxicity Test Report Certification (Permittee)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: _____ (Date)

_____ Authorized Signature

_____ Print or Type Name and Title

_____ Print or Type the Permittee's Name

MA0004936 Print or Type the NPDES Permit Number

Whole Effluent Toxicity Test Report Certification (Bioassay Laboratory)

The results reported relate only to the samples submitted as received

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: 5/18/19 (Date)

Kimberly Wills
Laboratory Manager
New England Bioassay a division of GZA

General Test Conditions

Permittee name: Patriot Beverages | Permit number: MA0004936

Client sample ID: Outfall 001 | Test Start Date: 4/15/19

Sample Collection Information

Effluent #1 Dates/Times: 4/14-15/19 @ 0600-0600 Receiving Water #1 Date/Time: 4/15/19 @ 0530

Effluent #2 Dates/Times: 4/16-17/19 @ 0700-0700 Receiving Water #2 Date/Time: 4/17/19 @ 0630

Effluent #3 Dates/Times: 4/18-19/19 @ 0700-0700 Receiving Water #3 Date/Time: 4/19/19 @ 0630

Were a minimum of three samples collected? Yes ☑ No ☐ *(see note below)

Were samples used within the first 36 hours of collection? Yes ☑ No ☐ * (see note below)

* sample collection note:

Test Conditions

Permittee's Receiving Water: Reedy Meadow Brook

- Dilution water: Laboratory synthetic soft water (hardness 45 - 55 mg/L CaCO3)
- Control water: Receiving water collected at a point immediately upstream of or away from the discharge

Effluent concentrations tested: 0%, 6.25%, 12.5%, 25%, 50%, 91%, 100%

Was effluent salinity adjusted? No ☑ Yes ☐ with Instant Ocean sea salts to _____ ppt

Dechlorination procedures: Chlorine is measured using 4500 CL-G DPD Colorimetric Method

- Dechlorination was not required

Aeration: Did Dissolved Oxygen levels fall below 40% saturation? Yes ☑ No ☐

Test Aerated at <100 bubbles/minute as of: 4/16/19

TRC results and further information about aeration of samples can be found attached in "sample receipt chemistry"

Reference Toxicant Data

Fathead minnows

Date:	4/1/19
Toxicant:	Sodium chloride
Dilution Water:	NEB Soft Water
Organism Source:	NEB
Growth IC25:	1.24 g/L
Results within range	Yes ☑ No ☐

Pimephales promelas Test Results

Permittee name: Patriot Beverages Permit number: MA0004936

Client sample ID: Outfall 001 Test Dates: 4/15/19 - 4/22/19

Test Acceptability Criteria

Lab Diluent Survival:	92.5 %	Mean Lab Diluent Growth:	0.63 mg
Brook Control Survival:	100 %	Mean Brook Control Growth:	0.72 mg
Thiosulfate Control Survival:	N/A %	Mean Thiosulfate Control Growth:	N/A mg

Presence of an asterisk (*) indicates EPA criteria was not met, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Results

		Permit Limit	Test Result	Pass/Fail Status
Acute Data	48 hr LC50	≥ 100%	>100%	Pass
	48 hr NOEC		100%	
	TUa			
Chronic Data	Chronic LC50		>100%	
	Survival C-NOEC		100%	
	Survival C-LOEC		>100%	
	Growth C-NOEC		100%	
	Growth C-LOEC		>100%	
	Growth IC25		>100%	
	Growth IC50		>100%	
	Reportable C-NOEC	≥ 91%	100%	Pass
	Reportable C-LOEC		>100%	
	MATC		>100%	
	TUc			

Presence of an asterisk (*) indicates qualified data, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Variability

Growth PMSD: 16.8% Upper & Lower EPA bounds: 12 - 30% ☐ Low ☑ Within bounds ☐ High

☐ PMSD exceeds upper bounds. Test results are highly variable and may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC)

☑ The PMSD falls within the upper (30%) and lower (12%) bounds. Results are reportable.

☐ PMSD falls below the lower bound test variability criterion. The test is very sensitive. The relative percent difference (RPD) between the control and each treatment was calculated and compared to the lower bound.

- ☐ The RPD values for all concentrations fall below the lower bound. Any differences observed in this test are considered statistically insignificant.
- ☐ Some of the concentrations that were flagged as statistically significant have RPD values that fall below the lower bound. Any differences observed in these concentrations will not be considered statistically significantly decreased from the control.
- ☐ No statistically significant reductions were observed in this test.

Pimephales promelas Test Results

Permittee name: Patriot Beverages Permit number: MA0004936

Client sample ID: Outfall 001 Test Dates: 4/15/19 - 4/22/19

Concentration - Response Evaluation

Survival: #12 No significant effects at any test concentration with a flat concentration-response curve. Test concentrations performed very similarly to dilution control.

Growth: #20 No significant effects at any test concentration with a "peak and valley" concentration-response curve. Test response did not follow a linear pattern, however effluent concentrations were not found to be statistically significantly lower than control survival.

The concentration - response relationship was reviewed and the following determination was made:

Survival	Growth	
X	X	Results are reliable and reportable
		Results are anomalous (see explanation below)
		Results are inconclusive - retest (see explanation below)

Results Discussion (if applicable):

TEST METHODS

Pimephales promelas

Test type:	Modified Chronic Static Renewal Freshwater Test
Test Reference Manual:	EPA-821-R-02-013 "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms"
Test Method:	*Pimephales promelas* Survival and Growth Test - EPA 1000.0
Temperature:	25 ˚C ± 1˚C (Temperatures should not deviate by more than 3˚C during the test) (required)
Light Quality:	Ambient Laboratory Illumination (recommended)
Light Intensity:	10-20 µE/m2/s, or 50-100 ft-c (recommended)
Photoperiod:	16 hours light, 8 hours dark (recommended)
Test chamber size:	600 mL (500 mL is recommended minimum)
Test solution volume:	250 mL (recommended minimum)
Renewal of Test Solutions:	Daily (required)
Age of Test Organisms:	Newly hatched larvae less than 24 hours old (required)
Number of Organisms Per Test Chamber:	10 (recommended)
Number of Replicate Test Chambers Per Treatment:	4 (required minimum)
Number of Organisms Per Test Concentration:	40 (required minimum)
Feeding Regime:	Feed 0.15 g of a concentrated suspension of newly hatched brine shrimp nauplii twice daily, 6 h between feedings (at the beginning of the work day prior to renewal, and at the end of the work day following renewal). Sufficient *Artemia* are added to provide an excess.
Cleaning:	Siphoned daily, immediately before test solution renewal (required)
Aeration:	None, unless DO concentration falls below 4.0 mg/L, at which point the rate should not exceed 100 bubbles/minute. (recommended)
Test Duration:	7 days (required)
Endpoints:	Survival and growth (weight) (required)
Test Acceptability:	80% or greater survival in controls; average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg (required)
Sampling Requirements:	Minimum of three samples with a maximum holding time of 36 hours before first use. (required)
Sample volume required:	2.5 L/Day (recommended)

PIMEPHALES PROMELAS
DATASHEETS & STATISTICAL ANALYSIS

NEW ENGLAND BIOASSAY TOXICITY DATA FORM
CHRONIC COVER SHEET

CLIENT:	Patriot Beverages	*P.promelas* TEST ID #	19-479
ADDRESS:	20 Harvard Road	CHAIN OF CUSTODY #	C39-1883/84
	Littleton, MA 01460	NEB PROJECT #	05.0044697.00
PERMITTEE:	Patriot Beverages	SAMPLE ID:	Outfall 001
PERMIT NUMBER:	MA0004936		
DILUTION WATER:	Soft Synthetic Lab Water		

VERTEBRATES

TEST SET-UP TECHNICIAN:	KO
TEST SPECIES:	*Pimephales promelas*
NEB LOT #	Pp19(4-15)
AGE:	< 24 hours
TEST SOLUTION VOLUME (mls):	400
ORGANISMS PER TEST CHAMBER:	10
ORGANISMS PER CONCENTRATION:	40

LABORATORY CONTROL WATER (SRCF)

Lot Number	Hardness mg/L	Alkalinity mg/L
C39-S0008	50	35

	DATE	TIME
TEST START:	4/15/19	1216
TEST END:	4/22/19	1223

COMMENTS: _____

REVIEWED BY: _____ DATE: 5/8/19

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460						
NEB PROJECT NUMBER:	05.0044697.00	TEST NUMBER:	19-479	COC #	C39-1883/84		
TEST ORGANISM:	*Pimephales promelas*	AGE:	<24 hours	Lot #	Pp19(4-15)		
START DATE:	4/15/19	TIME:	1216	END DATE:	4/22/19	TIME:	1223

Effluent Concentration	Replicate Number	Number of Survivors								
		Day								
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	KO	MM	MM	KO/BA	CH/BA	CH	CH	KO/BA	
NEB Lab Synthetic Diluent	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	9	9	9	
	D	10	10	10	10	10	8	8	8	
Reedy Meadow Brook Control	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
6.25%	A	10	10	8	8	8	7	7	7	
	B	10	10	10	10	10	10	10	10	
	C	10	10	9	9	9	9	9	9	
	D	10	10	10	10	10	10	10	10	
12.5%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
25%	A	10	10	9	9	9	9	9	9	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
50%	A	10	10	10	10	10	9	9	9	
	B	10	10	10	10	10	9	9	9	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
91%	A	10	10	10	10	10	10	9	9	
	B	10	10	10	10	10	9	9	9	
	C	10	10	10	10	9	9	9	9	
	D	10	10	10	10	10	10	9	9	

D.O. concentration fell below 4.0 mg/L X

All test solutions were aerated at <100 bubbles/minute as of 4/16/19 MM

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460				
NEB PROJECT NUMBER:	05.0044697.00	TEST NUMBER:	19-479	COC #	C39-1883/84
TEST ORGANISM:	*Pimephales promelas*	AGE:	<24 hours	Lot #	Pp19(4-15)
START DATE:	4/15/19 TIME: 1216	END DATE:	4/22/19	TIME:	1223

Effluent Concentration	Replicate Number	Number of Survivors								
		Day								
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	KO	MM	MM	KO/BA	CH/BA	CH	CH	KO/BA	
100%	A	10	10	10	10	9	9	9	8	
	B	10	10	10	10	10	9	9	9	
	C	10	9	9	9	9	9	9	9	
	D	10	10	10	10	10	10	10	10	

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

Permittee: Patriot Beverages Test Species: *Pimephales promelas* Test ID: 19-479

Test Date: 4/15/19 Project # 05.0044697.00

Concentration or Dilution	All organisms appear healthy and normal unless noted							
	Day 5 Observations			Date: 4/20/19	Technician:	CH		
Lab Diluent	Rep A:		Rep B:		Rep C:	NF	Rep D:	NF
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:	NF	Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:	F	Rep B:	F	Rep C:		Rep D:	
91%	Rep A:		Rep B:	F	Rep C:		Rep D:	
100%	Rep A:		Rep B:	F	Rep C:		Rep D:	
	Day 6 Observations			Date: 4/21/19	Technician:	CH		
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:	DW	Rep B:		Rep C:		Rep D:	F
100%	Rep A:		Rep B:		Rep C:		Rep D:	

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism

TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

Permittee: Patriot Beverages | Test Species: *Pimephales promelas* | Test ID: 19-479

Test Date: 4/15/19 | Project # 05.0044697.00

Concentration or Dilution	All organisms appear healthy and normal unless noted							
	Day 7 Observations		Date: 4/22/19		Technician: KO/BA			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:	NF	Rep B:		Rep C:		Rep D:	
	Day Observations		Date:		Technician:			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism

TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEW ENGLAND BIOASSAY WEIGHT DATA FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460		
NEB PROJECT #	05.0044697.00	NEB TEST NUMBER:	19-479
TEST START DATE	4/15/19	WEIGHING DATE:	5/6/19
TEST END DATE	4/22/19		
DRYING TEMPERATURE (°C)	100 ± 4	DRYING TIME:	minimum 6 hours
ANALYST-INITIAL WEIGHTS	MM	ANALYST-FINAL WEIGHTS	KW

Effluent Concentration	Replicate Number	A Weight of boat (mg)	B Dry Weight: Foil and Larvae (mg)
NEB Lab Synthetic Diluent	A	921.71	927.94
	B	925.81	932.89
	C	925.92	932.24
	D	934.26	939.68
Reedy Meadow Brook Control	A	859.41	866.61
	B	924.01	931.40
	C	923.08	930.15
	D	919.96	927.23
6.25%	A	938.35	943.60
	B	937.11	943.23
	C	929.82	937.56
	D	924.11	931.12
12.5%	A	951.80	958.70
	B	937.36	945.02
	C	931.29	939.07
	D	925.23	932.65
25%	A	922.74	930.44
	B	920.72	929.07
	C	926.57	934.95
	D	921.46	929.99
50%	A	918.48	925.20
	B	932.09	938.56
	C	925.18	931.98
	D	927.90	935.04
91%	A	855.08	860.74
	B	921.92	927.97
	C	926.47	932.60
	D	939.38	945.70
100%	A	925.42	931.15
	B	920.36	926.86
	C	858.67	864.60
	D	871.39	878.73

Concentration	Rep	Final Weight (mg)	Initial Weight (mg)	Total Weight (mg)	Average per fish (mg)	Mean fish weight (mg)	Standard Deviation
NEB Lab Synthetic Diluent	1	927.94	921.71	6.23	0.623	0.6263	0.067884092
	2	932.89	925.81	7.08	0.708		
	3	932.24	925.92	6.32	0.632		
	4	939.68	934.26	5.42	0.542		
Reedy Meadow Brook Control	1	866.61	859.41	7.20	0.720	0.7232	0.013375973
	2	931.40	924.01	7.39	0.739		
	3	930.15	923.08	7.07	0.707		
	4	927.23	919.96	7.27	0.727		
6.25%	1	943.60	938.35	5.25	0.525	0.6530	0.108027774
	2	943.23	937.11	6.12	0.612		
	3	937.56	929.82	7.74	0.774		
	4	931.12	924.11	7.01	0.701		
12.5%	1	958.70	951.80	6.90	0.690	0.7440	0.038987177
	2	945.02	937.36	7.66	0.766		
	3	939.07	931.29	7.78	0.778		
	4	932.65	925.23	7.42	0.742		
25%	1	930.44	922.74	7.70	0.770	0.8240	0.036851052
	2	929.07	920.72	8.35	0.835		
	3	934.95	926.57	8.38	0.838		
	4	929.99	921.46	8.53	0.853		
50%	1	925.20	918.48	6.72	0.672	0.6783	0.027669177
	2	938.56	932.09	6.47	0.647		
	3	931.98	925.18	6.80	0.680		
	4	935.04	927.90	7.14	0.714		
91%	1	860.74	855.08	5.66	0.566	0.6040	0.027748874
	2	927.97	921.92	6.05	0.605		
	3	932.60	926.47	6.13	0.613		
	4	945.70	939.38	6.32	0.632		
100%	1	931.15	925.42	5.73	0.573	0.6375	0.072131824
	2	926.86	920.36	6.50	0.650		
	3	864.60	858.67	5.93	0.593		
	4	878.73	871.39	7.34	0.734		

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	08-7092-1253	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4		
Analyzed:	07 May-19 10:02	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1		
Batch ID:	13-7475-3188	**Test Type:**	Growth-Survival (7d)	**Analyst:**			
Start Date:	15 Apr-19 12:16	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Receiving Water		
Ending Date:	22 Apr-19 12:23	**Species:**	Pimephales promelas	**Brine:**	Not Applicable		
Test Length:	7d 0h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture	**Age:**	<24
Sample ID:	17-5837-7864	**Code:**	68CEB788	**Project:**			
Sample Date:	15 Apr-19 06:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)		
Receipt Date:	15 Apr-19 10:20	**CAS (PC):**		**Station:**			
Sample Age:	6h	**Client:**	Patriot Beverages				

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	498992	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

2d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**A/B**	**Mean**	**%Effect**
0	D	4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
6.25		4	0.9250	0.8000	1.0000	0.0957	10.35%	7.5%	37/40	0.98	2.0%
12.5		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	0.98	2.0%
25		4	0.9750	0.9000	1.0000	0.0500	5.13%	2.5%	39/40	0.98	2.0%
50		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	0.98	2.0%
91		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	0.98	2.0%
100		4	0.9750	0.9000	1.0000	0.0500	5.13%	2.5%	39/40	0.975	2.5%

2d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		0.8000	1.0000	0.9000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		0.9000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	0.9000	1.0000

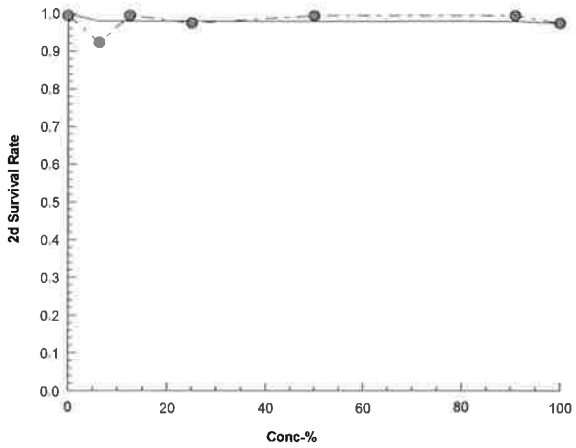
2d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		8/10	10/10	9/10	10/10
12.5		10/10	10/10	10/10	10/10
25		9/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	9/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	08-7092-1253	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	07 May-19 10:02	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	19-3636-3610	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	07 May-19 10:02	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	13-7475-3188	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	15 Apr-19 12:16	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Receiving Water
Ending Date:	22 Apr-19 12:23	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	17-5837-7864	**Code:**	68CEB788	**Project:**	
Sample Date:	15 Apr-19 06:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	15 Apr-19 10:20	**CAS (PC):**		**Station:**	
Sample Age:	6h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	136762	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.925	0.8	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**A/B**	**Mean**	**%Effect**
0	D	4	0.9250	0.8000	1.0000	0.0957	10.35%	0.0%	37/40	0.95	0.0%
6.25		4	0.9000	0.7000	1.0000	0.1414	15.71%	2.7%	36/40	0.95	0.0%
12.5		4	1.0000	1.0000	1.0000	0.0000	0.00%	-8.11%	40/40	0.95	0.0%
25		4	0.9750	0.9000	1.0000	0.0500	5.13%	-5.41%	39/40	0.95	0.0%
50		4	0.9500	0.9000	1.0000	0.0577	6.08%	-2.7%	38/40	0.95	0.0%
91		4	0.9000	0.9000	0.9000	0.0000	0.00%	2.7%	36/40	0.9	5.26%
100		4	0.9000	0.8000	1.0000	0.0817	9.07%	2.7%	36/40	0.9	5.26%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	0.9000	0.8000
6.25		0.7000	1.0000	0.9000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		0.9000	1.0000	1.0000	1.0000
50		0.9000	0.9000	1.0000	1.0000
91		0.9000	0.9000	0.9000	0.9000
100		0.8000	0.9000	0.9000	1.0000

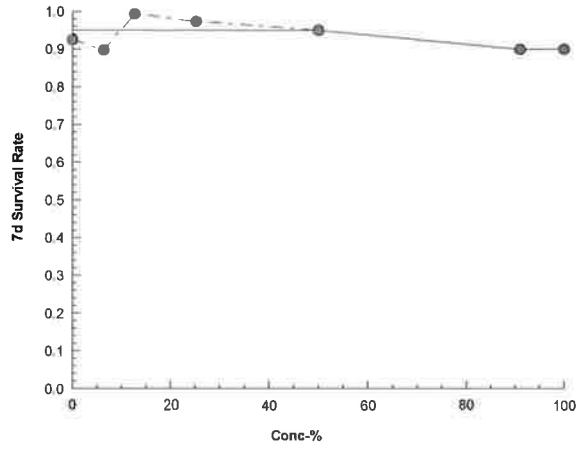
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		8/10	10/10	9/10	10/10
12.5		10/10	10/10	10/10	10/10
25		9/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	9/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	19-3636-3610	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	07 May-19 10:02	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	07-6041-5828	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	07 May-19 10:03	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	13-7475-3188	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	15 Apr-19 12:16	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Receiving Water
Ending Date:	22 Apr-19 12:23	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	17-5837-7864	**Code:**	68CEB788	**Project:**	
Sample Date:	15 Apr-19 06:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	15 Apr-19 10:20	**CAS (PC):**		**Station:**	
Sample Age:	6h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1401862	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.6262	0.25	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a

Mean Dry Biomass-mg Summary

			Calculated Variate						Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**Mean**	**%Effect**
0	D	4	0.6262	0.542	0.708	0.06789	10.84%	0.0%	0.7118	0.0%
6.25		4	0.653	0.525	0.774	0.108	16.54%	-4.27%	0.7118	0.0%
12.5		4	0.744	0.69	0.778	0.03899	5.24%	-18.8%	0.7118	0.0%
25		4	0.824	0.77	0.853	0.03685	4.47%	-31.58%	0.7118	0.0%
50		4	0.6782	0.647	0.714	0.02767	4.08%	-8.3%	0.6782	4.72%
91		4	0.604	0.566	0.632	0.02775	4.59%	3.55%	0.6207	12.79%
100		4	0.6375	0.573	0.734	0.07213	11.31%	-1.8%	0.6207	12.79%

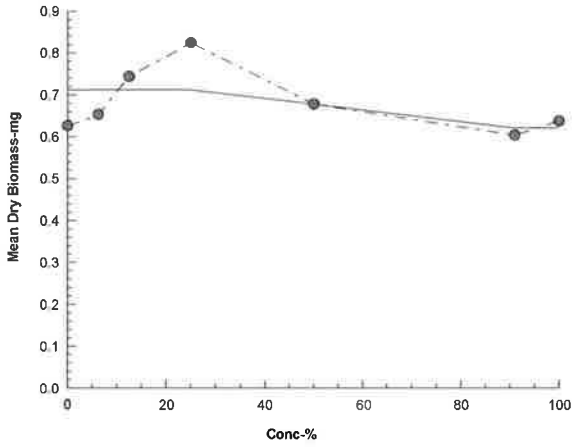
Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.623	0.708	0.632	0.542
6.25		0.525	0.612	0.774	0.701
12.5		0.69	0.766	0.778	0.742
25		0.77	0.835	0.838	0.853
50		0.672	0.647	0.68	0.714
91		0.566	0.605	0.613	0.632
100		0.573	0.65	0.593	0.734

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	07-6041-5828	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	07 May-19 10:03	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	17-6163-5147	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	07 May-19 10:02	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Batch ID:	13-7475-3188	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	15 Apr-19 12:16	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Receiving Water
Ending Date:	22 Apr-19 12:23	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	17-5837-7864	**Code:**	68CEB788	**Project:**	
Sample Date:	15 Apr-19 06:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	15 Apr-19 10:20	**CAS (PC):**		**Station:**	
Sample Age:	6h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	>100	n/a	1	14.44%

Dunnett Multiple Comparison Test

Control	vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	0.3575	2.448	0.199	6	CDF	0.7388	Non-Significant Effect
		12.5	-1.442	2.448	0.199	6	CDF	0.9967	Non-Significant Effect
		25	-0.9397	2.448	0.199	6	CDF	0.9849	Non-Significant Effect
		50	-0.4374	2.448	0.199	6	CDF	0.9438	Non-Significant Effect
		91	0.5673	2.448	0.199	6	CDF	0.6518	Non-Significant Effect
		100	0.5023	2.448	0.199	6	CDF	0.7020	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.925	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0941756	0.0156959	6	1.193	0.3481	Non-Significant Effect
Error	0.276315	0.0131579	21			
Total	0.370491		27			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	3.611	3.812	0.0128	Equal Variances
Variances	Mod Levene Equality of Variance Test	2.414	3.812	0.0622	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9318	0.8975	0.0685	Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	0.9250	0.7727	1.0000	0.9500	0.8000	1.0000	0.0479	10.35%	0.00%
6.25		4	0.9000	0.6750	1.0000	0.9500	0.7000	1.0000	0.0707	15.71%	2.70%
12.5		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-8.11%
25		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	-5.41%
50		4	0.9500	0.8581	1.0000	0.9500	0.9000	1.0000	0.0289	6.08%	-2.70%
91		4	0.9000	0.8998	0.9002	0.9000	0.9000	0.9000	0.0000	0.00%	2.70%
100		4	0.9000	0.7701	1.0000	0.9000	0.8000	1.0000	0.0408	9.07%	2.70%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.295	1.061	1.529	1.331	1.107	1.412	0.07348	11.35%	0.00%
6.25		4	1.266	0.9499	1.582	1.331	0.9912	1.412	0.09936	15.70%	2.24%
12.5		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	-9.03%
25		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	-5.89%
50		4	1.331	1.181	1.48	1.331	1.249	1.412	0.04705	7.07%	-2.74%
91		4	1.249	1.249	1.249	1.249	1.249	1.249	0	0.00%	3.55%
100		4	1.254	1.056	1.453	1.249	1.107	1.412	0.06231	9.93%	3.15%

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	17-6163-5147	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	07 May-19 10:02	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	0.9000	0.8000
6.25		0.7000	1.0000	0.9000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		0.9000	1.0000	1.0000	1.0000
50		0.9000	0.9000	1.0000	1.0000
91		0.9000	0.9000	0.9000	0.9000
100		0.8000	0.9000	0.9000	1.0000

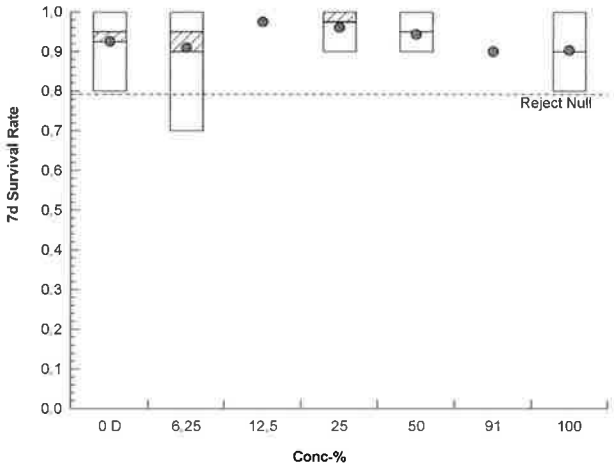
Angular (Corrected) Transformed Detail

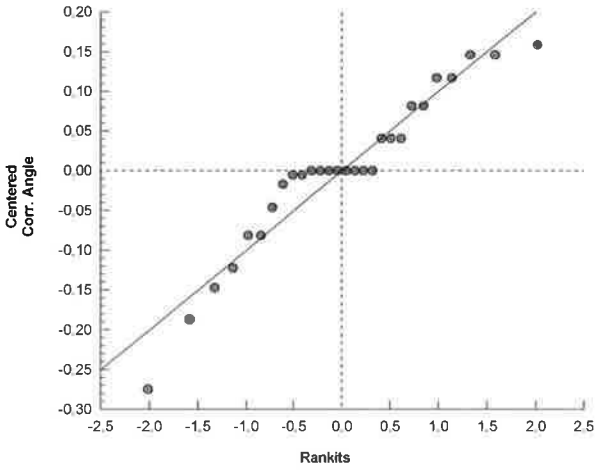
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.412	1.412	1.249	1.107
6.25		0.9912	1.412	1.249	1.412
12.5		1.412	1.412	1.412	1.412
25		1.249	1.412	1.412	1.412
50		1.249	1.249	1.412	1.412
91		1.249	1.249	1.249	1.249
100		1.107	1.249	1.249	1.412

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	9/10	8/10
6.25		7/10	10/10	9/10	10/10
12.5		10/10	10/10	10/10	10/10
25		9/10	10/10	10/10	10/10
50		9/10	9/10	10/10	10/10
91		9/10	9/10	9/10	9/10
100		8/10	9/10	9/10	10/10

Graphics





Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	18-2924-7501	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	07 May-19 10:02	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Batch ID:	13-7475-3188	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	15 Apr-19 12:16	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Receiving Water
Ending Date:	22 Apr-19 12:23	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	17-5837-7864	**Code:**	68CEB788	**Project:**	
Sample Date:	15 Apr-19 06:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	15 Apr-19 10:20	**CAS (PC):**		**Station:**	
Sample Age:	6h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	100	>100	n/a	1	16.81%

Dunnett Multiple Comparison Test

Control vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water	6.25	-0.622	2.448	0.105	6	CDF	0.9643	Non-Significant Effect
	12.5	-2.738	2.448	0.105	6	CDF	1.0000	Non-Significant Effect
	25	-4.598	2.448	0.105	6	CDF	1.0000	Non-Significant Effect
	50	-1.209	2.448	0.105	6	CDF	0.9932	Non-Significant Effect
	91	0.5174	2.448	0.105	6	CDF	0.6734	Non-Significant Effect
	100	-0.2616	2.448	0.105	6	CDF	0.9161	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.6262	0.25	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.144116	0.0240194	6	6.493	5.5E-04	Significant Effect
Error	0.0776838	0.0036992	21			
Total	0.2218		27			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	8.855	16.81	0.1819	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9762	0.8975	0.7511	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	0.6262	0.5182	0.7343	0.6275	0.542	0.708	0.03394	10.84%	0.00%
6.25		4	0.653	0.4811	0.8249	0.6565	0.525	0.774	0.05401	16.54%	-4.27%
12.5		4	0.744	0.682	0.806	0.754	0.69	0.778	0.01949	5.24%	-18.80%
25		4	0.824	0.7654	0.8826	0.8365	0.77	0.853	0.01843	4.47%	-31.58%
50		4	0.6782	0.6342	0.7223	0.676	0.647	0.714	0.01383	4.08%	-8.30%
91		4	0.604	0.5598	0.6482	0.609	0.566	0.632	0.01388	4.59%	3.55%
100		4	0.6375	0.5227	0.7523	0.6215	0.573	0.734	0.03606	11.31%	-1.80%

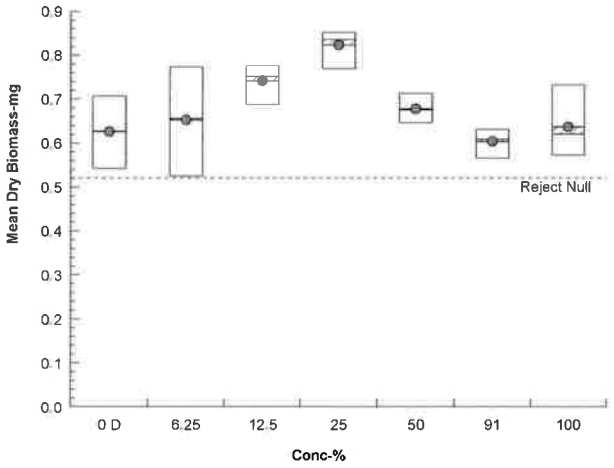
Mean Dry Biomass-mg Detail

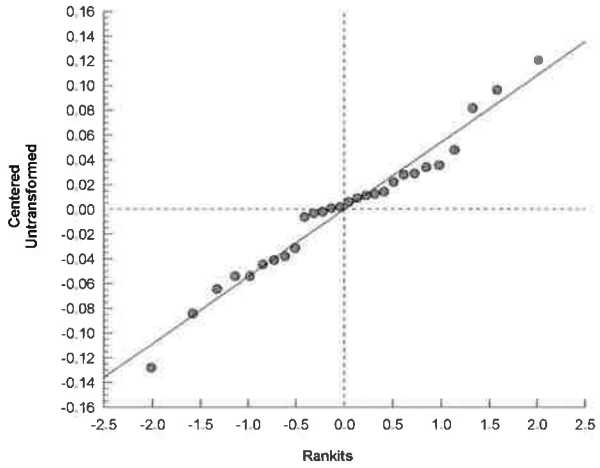
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.623	0.708	0.632	0.542
6.25		0.525	0.612	0.774	0.701
12.5		0.69	0.766	0.778	0.742
25		0.77	0.835	0.838	0.853
50		0.672	0.647	0.68	0.714
91		0.566	0.605	0.613	0.632
100		0.573	0.65	0.593	0.734

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	18-2924-7501	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	07 May-19 10:02	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1

Graphics





NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	05.0044697.00			TEST ORGANISM			*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water			START DATE:			4/15/19 TIME:	1216
ANALYST	KO	MM	MM	KO/BA	CH/BA	CH	CH	
NEB Lab Synthetic Diluent	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.9	25.9	25.9	24.6	25.0	25.6	25.7	
D.O. mg/L Initial	7.9	8.2	8.2	8.6	8.2	8.1	8.1	
pH s.u. Initial	7.7	7.8	7.5	7.5	8.1	8.1	7.9	
Conductivity µS Initial	185	185	185	186	189	187	188	
Temp °C Final	25.3	24.8	25.1	25.4	25.5	25.6	25.4	
D.O. mg/L Final	7.5	8.3	8.3	8.1	8.1	8.2	8.2	
pH s.u. Final	7.5	7.9	8.2	7.7	7.7	7.8	7.7	
Conductivity µS Final	187	191	190	193	190	191	190	
Brook Control	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.5	25.1	25.7	25.3	24.7	25.2	25.2	
D.O. mg/L Initial	9.0	9.1	9.1	9.2	8.6	9.0	9.2	
pH s.u. Initial	7.0	7.2	7.0	7.1	7.4	7.1	7.0	
Conductivity µS Initial	165	165	213	212	230	227	228	
Temp °C Final	25.3	24.2	24.6	25.0	24.5	24.5	24.2	
D.O. mg/L Final	7.4	8.3	8.2	8.1	8.3	8.3	8.3	
pH s.u. Final	7.3	7.6	7.9	7.5	7.6	7.6	7.6	
Conductivity µS Final	170	174	214	220	235	239	238	
6.25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.8	26.0	25.8	24.6	24.9	25.5	25.5	
D.O. mg/L Initial	7.9	8.1	8.2	8.5	8.3	8.2	8.1	
pH s.u. Initial	8.1	8.2	7.9	7.8	8.2	8.2	8.2	
Conductivity µS Initial	273	271	273	285	284	279	280	
Temp °C Final	25.5	25.4	25.4	25.6	25.2	25.3	25.2	
D.O. mg/L Final	6.8	8.2	8.3	8.1	8.1	8.2	8.2	
pH s.u. Final	7.8	8.1	8.0	8.1	8.0	8.0	8.0	
Conductivity µS Final	277	279	277	291	288	288	285	
12.5%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.7	26.0	25.7	24.6	24.9	25.4	25.5	
D.O. mg/L Initial	7.9	8.0	8.3	8.5	8.2	8.2	8.2	
pH s.u. Initial	8.2	8.2	8.0	8.1	8.4	8.3	8.3	
Conductivity µS Initial	362	360	367	366	385	373	379	
Temp °C Final	25.4	24.0	24.0	24.4	25.3	25.1	25.0	
D.O. mg/L Final	6.4	8.3	8.4	8.2	8.1	8.1	8.1	
pH s.u. Final	7.9	8.3	8.2	8.2	8.2	8.2	8.2	
Conductivity µS Final	363	386	386	389	388	386	386	

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	05.0044697.00			TEST ORGANISM			*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water			START DATE:			4/15/19 TIME:	1216
25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.6	25.9	25.5	24.6	24.9	25.5	25.6	
D.O. mg/L Initial	7.8	7.8	8.5	8.6	8.3	8.3	8.3	
pH s.u. Initial	8.3	8.3	8.2	8.2	8.5	8.4	8.4	
Conductivity µS Initial	531	534	549	549	564	565	555	
Temp °C Final	25.1	25.5	25.4	25.5	25.5	25.6	25.3	
D.O. mg/L Final	6.0	8.2	8.3	8.0	8.0	8.1	8.1	
pH s.u. Final	8.2	8.5	8.4	8.4	8.4	8.4	8.4	
Conductivity µS Final	536	543	553	559	563	570	560	
50%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.2	25.7	25.2	24.6	24.9	25.3	25.5	
D.O. mg/L Initial	7.7	7.3	8.8	8.7	8.5	8.5	8.5	
pH s.u. Initial	8.4	8.3	8.2	8.3	8.5	8.4	8.4	
Conductivity µS Initial	885	883	904	904	936	922	933	
Temp °C Final	25.0	24.9	25.1	25.3	25.3	25.3	25.2	
D.O. mg/L Final	4.2	8.2	8.2	8.1	8.0	8.0	8.0	
pH s.u. Final	8.4	8.8	8.7	8.7	8.6	8.6	8.7	
Conductivity µS Final	886	895	910	917	935	932	937	
91%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.5	25.3	24.5	24.6	24.8	25.0	25.4	
D.O. mg/L Initial	7.5	6.5	9.5	8.9	8.9	8.9	8.8	
pH s.u. Initial	8.3	8.3	8.2	8.3	8.5	8.4	8.4	
Conductivity µS Initial	1,426	1,432	1,472	1,473	1,525	1,511	1,511	
Temp °C Final	25.3	25.0	25.1	25.1	25.3	25.3	25.4	
D.O. mg/L Final	3.0	8.0	8.2	8.0	8.0	8.1	8.5	
pH s.u. Final	8.5	8.9	8.7	8.7	8.7	8.7	8.8	
Conductivity µS Final	1,415	1,435	1,427	1,410	1,405	1,388	1,379	
100%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.2	25.1	24.2	24.5	24.7	24.8	25.3	
D.O. mg/L Initial	7.4	5.4	10.1	9.1	9.4	9.4	9.2	
pH s.u. Initial	8.3	8.3	8.2	8.3	8.4	8.3	8.4	
Conductivity µS Initial	1,548	1,550	1,598	1,590	1,650	1,638	1,638	
Temp °C Final	25.2	25.5	25.6	25.6	25.2	25.3	25.2	
D.O. mg/L Final	2.9	7.9	8.1	8.0	8.0	8.0	8.0	
pH s.u. Final	8.5	8.9	8.7	8.7	8.6	8.6	8.6	
Conductivity µS Final	1,538	1,520	1,482	1,469	1,542	1,526	1,520	

Table of Random Permutations of 16 **P.promelas Test ID#** 19-479

7	12	15	15	1	2	7	16	10	2	14	15	7	13	13	10	6	1	8	10
13	3	8	16	7	10	11	10	13	5	11	7	13	16	7	7	5	13	2	14
3	1	4	5	14	13	3	14	9	13	13	2	9	15	6	2	8	4	5	8
11	8	16	14	15	6	2	6	2	16	8	5	12	3	9	13	4	3	10	4
14	9	1	6	3	9	14	13	8	6	5	8	14	7	3	15	13	11	4	7
2	16	10	13	5	5	13	2	11	7	3	12	5	14	12	16	2	2	9	15
4	6	13	7	2	15	1	9	1	4	7	10	6	9	11	9	7	6	16	11
6	14	6	10	4	14	4	15	3	3	4	16	2	6	5	1	12	10	6	9
10	15	2	1	13	12	16	3	4	8	10	1	15	5	14	12	14	12	3	2
12	10	7	12	9	11	9	8	12	14	15	4	11	8	16	8	9	14	14	1
15	7	5	2	10	7	8	12	6	15	6	13	16	12	15	4	11	8	12	6
16	2	11	8	8	8	15	5	16	1	1	9	8	1	8	14	16	5	13	5
9	13	14	3	6	4	10	11	5	12	9	3	10	4	4	3	10	9	1	3
8	11	9	4	11	3	12	7	7	10	12	14	3	10	1	6	15	16	15	12
1	5	12	11	16	16	5	4	14	9	16	11	1	2	10	5	1	15	7	13
5	4	3	9	12	1	6	1	15	11	2	6	4	11	2	11	3	7	11	16
11	8	16	5	5	13	1	13	2	16	14	12	9	8	7	5	13	3	13	3
2	2	8	8	14	16	4	3	8	11	10	14	15	1	2	11	4	5	15	9
6	13	2	13	6	5	9	15	11	10	12	6	16	15	16	9	10	12	16	15
14	12	4	16	16	11	14	10	5	12	3	3	12	14	15	13	6	4	1	16
8	6	3	9	4	10	6	4	16	2	2	9	8	16	4	6	5	15	7	8
9	15	12	10	3	2	12	6	1	15	4	13	7	7	9	12	14	8	8	11
3	10	11	12	13	12	5	11	7	8	9	5	14	11	10	1	3	13	3	5
16	1	13	14	8	14	15	5	3	7	11	15	6	12	5	7	11	1	14	4
1	14	14	2	9	15	16	14	6	14	7	8	3	13	11	8	7	7	12	7
4	4	6	4	12	3	11	8	15	9	8	1	13	6	3	3	15	9	9	12
15	5	1	11	10	6	3	7	10	5	5	11	10	10	12	15	16	14	5	2
5	3	5	6	7	7	13	2	14	3	16	4	5	5	13	4	9	16	2	6
12	7	15	15	15	9	8	12	12	13	15	10	1	4	6	16	2	6	11	1
10	11	10	3	2	4	2	1	4	6	6	7	11	9	14	10	8	11	4	13
7	9	7	7	11	1	7	16	13	1	13	2	4	2	1	2	12	2	10	14
13	16	9	1	1	8	10	9	9	4	1	16	2	3	8	14	1	10	6	10
1	6	7	4	8	6	5	2	8	15	4	6	6	1	4	5	7	13	2	10
9	15	11	3	11	15	9	10	1	3	8	2	15	7	9	8	16	1	14	3
10	16	4	5	12	9	16	11	7	1	7	16	11	8	3	3	12	2	3	4
4	14	1	9	5	5	4	13	6	8	15	5	12	5	7	16	5	11	8	1
7	3	13	14	15	2	1	14	16	5	14	9	2	16	1	12	6	14	4	13
16	11	2	1	14	16	6	9	3	4	16	14	3	15	11	11	3	9	12	5
3	10	16	16	13	7	13	1	11	14	9	10	16	2	10	2	10	7	10	16
11	13	9	13	4	13	8	3	5	13	10	12	5	12	5	14	13	16	5	6
15	2	3	12	9	12	2	4	13	10	3	13	14	4	2	1	14	8	6	12
14	1	14	6	10	1	3	12	4	2	2	4	13	3	16	9	9	3	7	14
13	12	5	11	3	11	15	8	2	7	11	7	8	14	6	4	4	4	15	11
12	5	10	7	2	14	7	15	14	16	13	1	9	10	12	10	11	10	9	8
8	9	8	10	6	4	11	7	10	11	6	8	4	9	8	15	8	6	11	9
2	7	6	2	1	8	10	6	15	12	1	11	7	11	13	6	1	15	13	15
6	4	15	8	16	10	14	16	9	6	12	3	10	6	14	7	2	12	16	7
5	8	12	15	7	3	12	5	12	9	5	15	1	13	15	13	15	5	1	2
						Conc		Rep											
13	4	10	4	16	13	16	13	5	3	6	14	1	16	8	7	2	3	3	12
5	14	4	6	8	2	15	1	13	14	16	4	15	4	3	12	12	1	4	7
2	2	2	15	14	16	9	12	16	6	10	15	14	9	10	1	14	8	8	16
7	12	15	8	12	3	5	14	7	12	5	13	16	1	7	5	11	2	9	3
6	9	7	14	9	14	10	11	15	11	12	1	12	12	14	16	3	11	11	8
14	5	16	7	10	8	11	8	14	13	7	11	6	3	11	4	4	6	6	9
15	11	8	9	7	12	8	7	1	15	9	3	3	7	13	11	10	4	5	1
11	6	6	1	4	1	3	16	12	5	4	9	13	13	6	8	15	9	1	14
4	10	3	16	2	11	7	9	6	9	1	8	4	11	5	2	16	10	12	4
1	8	1	13	1	15	4	4	11	4	2	16	5	8	1	9	5	12	16	6
9	7	14	2	6	4	14	10	9	8	15	10	7	10	9	10	6	14	10	11
12	1	9	10	15	5	2	15	10	2	14	2	8	2	4	13	8	5	15	5
3	3	12	11	5	9	6	6	3	10	13	12	9	6	2	15	7	15	7	13
10	15	11	5	13	7	12	5	2	7	11	5	10	15	12	3	1	13	13	10
8	13	13	3	3	10	13	2	4	1	8	6	11	14	15	6	9	16	2	2
16	16	5	12	11	6	1	3	8	16	3	7	2	5	16	14	13	7	14	15

CHEMICAL ANALYSIS

Please note the subcontract laboratory has its own QAQC and data review processes, and therefore New England Bioassay does not review the analytical results we receive.

PHOENIX
Environmental Laboratories, Inc.

Monday, April 22, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES
SDG ID: GCC95002
Sample ID#s: CC95002 - CC95005

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone (860) 645-1102 Fax (860) 645-0823

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

April 22, 2019

SDG I.D.: GCC95002

Project ID: PATRIOT BEVERAGES

Client Id	Lab Id	Matrix
EFFLUENT # C39-1883	CC95002	WASTE WATER
REEDY MEADOWS BROOK #1 C39-188	CC95003	WASTE WATER
EFF GRAB #1	CC95004	WASTE WATER
SRFC LAB WATER C39-1885	CC95005	WASTE WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		04/15/19	6:00
Location Code:	NEB	Received by:	LB	04/15/19	14:50
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22458				

Laboratory Data

SDG ID: GCC95002
Phoenix ID: CC95002

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT # C39-1883

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.067	0.005	mg/L	1	04/17/19	EK	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	04/17/19	RS	SM3113B
Copper	< 0.0010	0.0010	mg/L	1	04/17/19	EK	E200.7
Hardness (CaCO3)	162	0.1	mg/L	1	04/17/19		E200.7
Nickel	0.008	0.001	mg/L	1	04/17/19	EK	E200.7
Lead	< 0.0003	0.0003	mg/L	1	04/17/19	RS	SM3113B
Zinc	0.004	0.002	mg/L	1	04/17/19	EK	E200.7
Alkalinity-CaCO3	534	5.00	mg/L	1	04/16/19	RWR/KDB	SM2320B-11
Conductivity	1330	5.00	umhos/cm	1	04/16/19	RWR/KDB	SM2510B-11
Ammonia as Nitrogen	0.06	0.05	mg/L	1	04/18/19	KDB	E350.1
Tot. Diss. Solids	910	13	mg/L	1.3	04/17/19	BJA/DA	SM2540C-11
Tot. Org. Carbon	25.3	1.0	mg/L	2	04/18/19	RWR	SM5310B-11
Total Solids	970	13	mg/L	1.3	04/18/19	BJA/DA	SM2540B-11
Total Metals Digestion	Completed				04/16/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller

Phyllis Shiller, Laboratory Director
April 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

Ver 1

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		04/15/19	5:30
Location Code:	NEB	Received by:	LB	04/15/19	14:50
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22458				

Laboratory Data

SDG ID: GCC95002
Phoenix ID: CC95003

Project ID: PATRIOT BEVERAGES
Client ID: REEDY MEADOWS BROOK #1 C39-1884

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.117	0.005	mg/L	1	04/17/19	EK	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	04/17/19	RS	SM3113B
Copper	< 0.0010	0.0010	mg/L	1	04/17/19	EK	E200.7
Hardness (CaCO3)	23.7	0.1	mg/L	1	04/17/19		E200.7
Nickel	0.002	0.001	mg/L	1	04/17/19	EK	E200.7
Lead	< 0.0003	0.0003	mg/L	1	04/17/19	RS	SM3113B
Zinc	0.005	0.002	mg/L	1	04/17/19	EK	E200.7
Alkalinity-CaCO3	15.2	5.00	mg/L	1	04/16/19	RWR/KDB	SM2320B-11
Conductivity	153	5.00	umhos/cm	1	04/16/19	RWR/KDB	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	04/18/19	KDB	E350.1
pH	7.10	1.00	pH Units	1	04/16/19 02:20	RWR/KDB	SM4500-H B-11
Tot. Org. Carbon	7.52	0.50	mg/L	1	04/18/19	RWR	SM5310B-11
Total Metals Digestion	Completed				04/16/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
April 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

Ver 1

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		04/15/19	6:00
Location Code:	NEB	Received by:	LB	04/15/19	14:50
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22458				

Laboratory Data

SDG ID: GCC95002
Phoenix ID: CC95004

Project ID: PATRIOT BEVERAGES
Client ID: EFF GRAB #1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	< 0.02	0.02	mg/L	1	04/15/19 19:37	O	SM4500CLG-97
pH	8.28	1.00	pH Units	1	04/16/19 02:23	RWR/KDB	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
April 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		04/15/19	
Location Code:	NEB	Received by:	LB	04/15/19	14:50
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22458				

Laboratory Data

SDG ID: GCC95002
Phoenix ID: CC95005

Project ID: PATRIOT BEVERAGES
Client ID: SRFC LAB WATER C39-1885

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.016	0.005	mg/L	1	04/17/19	EK	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	04/17/19	RS	SM3113B
Copper	< 0.0010	0.0010	mg/L	1	04/17/19	EK	E200.7
Hardness (CaCO3)	45.9	0.1	mg/L	1	04/17/19		E200.7
Nickel	< 0.001	0.001	mg/L	1	04/17/19	EK	E200.7
Lead	< 0.0003	0.0003	mg/L	1	04/17/19	RS	SM3113B
Zinc	0.005	0.002	mg/L	1	04/17/19	EK	E200.7
Alkalinity-CaCO3	38.7	5.00	mg/L	1	04/16/19	EG	SM2320B-11
Conductivity	170	5.00	umhos/cm	1	04/16/19	EG	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	04/18/19	KDB	E350.1
Tot. Org. Carbon	< 0.50	0.50	mg/L	1	04/18/19	RWR	SM5310B-11
Total Metals Digestion	Completed				04/16/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
April 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

Ver 1

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

April 22, 2019

QA/QC Data

SDG I.D.: GCC95002

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 474288 (mg/L), QC Sample No: CC91205 (CC95002, CC95003, CC95005)													
Cadmium - Water	BRL	0.0001	<0.0001	<0.0001	NC	109			104			75 - 125	20
QA/QC Batch 474633 (mg/L), QC Sample No: CC92876 (CC95002, CC95003, CC95005)													
Lead (Furnace) - Water	BRL	0.001	<0.0003	<0.001	NC	101			110			75 - 125	20
QA/QC Batch 475010 (mg/L), QC Sample No: CC94847 (CC95002, CC95003, CC95005)													
ICP Metals - Aqueous													
Aluminum	BRL	0.0050	0.031	0.0291	6.30	95.6			106			75 - 125	20
Copper	BRL	0.0025	0.003	0.0030	NC	97.2			106			75 - 125	20
Nickel	BRL	0.0005	0.009	0.0091	1.10	97.5			100			75 - 125	20
Zinc	BRL	0.0020	0.027	0.0260	3.80	95.3			101			75 - 125	20

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

April 22, 2019

QA/QC Data

SDG I.D.: GCC95002

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 475601 (mg/L), QC Sample No: CC90081 (CC95002)													
Total Organic Carbon	BRL	1.0	3.1	3.2	NC	102			97.0			85 - 115	20
Comment:													
Additional criteria matrix spike acceptance range is 75-125%.													
QA/QC Batch 474910 (mg/L), QC Sample No: CC94935 (CC95002, CC95003, CC95005)													
Alkalinity-CaCO3	BRL	5.00	<20.0	<20.0	NC	98.6						85 - 115	20
QA/QC Batch 474918 (umhos/cm), QC Sample No: CC94935 (CC95002, CC95003, CC95005)													
Conductivity	BRL	5.00	52	53.0	1.90	90.0						85 - 115	20
Comment:													
Additional criteria matrix spike acceptance range is 75-125%.													
QA/QC Batch 475394 (mg/L), QC Sample No: CC95002 (CC95002)													
Total Solids	BRL	10	970	980	1.00	100						85 - 115	20
QA/QC Batch 474906 (pH), QC Sample No: CC95099 (CC95003, CC95004)													
pH			7.66	7.75	1.20	97.3						85 - 115	20
QA/QC Batch 475077 (mg/L), QC Sample No: CC95130 (CC95002)													
Tot. Diss. Solids	BRL	10	260	280	7.40	98.0						85 - 115	20
QA/QC Batch 475403 (mg/L), QC Sample No: CC95785 (CC95003, CC95005)													
Total Organic Carbon	BRL	1.0	4.6	4.5	NC				89.0			85 - 115	20
Comment:													
Additional criteria matrix spike acceptance range is 75-125%.													
QA/QC Batch 475129 (mg/L), QC Sample No: CC94596 (CC95002, CC95003, CC95005)													
Ammonia as Nitrogen	BRL	0.05	1.67	1.80	7.50	98.5			99.3			90 - 110	20
QA/QC Batch 474859 (mg/L), QC Sample No: CC95053 (CC95004)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	96.1							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
April 22, 2019

Monday, April 22, 2019

Criteria: None

State: CT

Sample Criteria Exceedances Report

GCC95002 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

April 22, 2019 SDG I.D.: GCC95002

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Cooler: Yes ☑ No ☐
Coolant: IPK ☑ ICE ☐ No ☐
Temp 2.3 °C Pg of

CHAIN OF CUSTODY RECORD

PHOENIX Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Data Delivery/Contact Options:
☐ Fax:
☐ Phone:
☒ Email: Kimberly.wills@gza.com

Customer: NEB - a div. of GZA
Address: 117 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages
Report to: Kim Wills
Invoice to: Kim Wills
QUOTE #

Project P.O.: 22458

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature _____ Date: _____

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe OIL=Oil
B=Bulk L=Liquid X = _____(Other)

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia (0.1 mg/L)	pH	TRC (0.02 mg/L)	Hardness & Alkalinity	Specific conductance	Total solids	Total dissolved solids	TDC	Cd (AA), Pb (AA), Cu, Zn, Ni, Al	GL Amber 8 oz. w/H3PO4	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [ ] HCl	GL Amber 1000ml [ ] As is [ ] H2SO4	Pl As is [ ] 250ml [ ] 500ml [ ] 1000ml	Pl H2SO4 [ ] 250ml [ ] 500ml	Pl HNO3 250ml	Pl NaOH 250ml	Bacteria Bottle w/thio	Bacteria Bottle as is
95002	Effluent #1 C39-1883	WW	4/14-15/19	0600-0600	X			X	X	X	X	X	X	X	1						1	1	1				
95003	Reedy Meadow Brook #1 C39-1884	0	4/15/19	0530	X	X		X	X			X	X	X	1						1	1	1				
95004	Eff grab #1	WW	4/15/19	0600		X	X														1						
95005	SRCF lab water C39-1885	0			X	X		X	X			X	X	X	1						1	1	1				

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	4-15-19	1420
[signature]	Thystate Response	4-15-19	14:50

Comments, Special Requirements or Regulations:
Cd - 0.0005 mg/L; Pb - 0.0005 mg/L
Cu - 0.003 mg/L; Zn - 0.005 mg/L
Ni - 0.005 mg/L; Al - 0.02 mg/L

Turnaround Time:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ Direct Exposure (Residential)
☐ GW
☐ Other

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1 GW-1 ☐ S-1 GW-2 ☐ S-1 GW-3
☐ S-2 GW-1 ☐ S-2 GW-2 ☐ S-2 GW-3
☐ S-3 GW-1 ☐ S-3 GW-2 ☐ S-3 GW-3
☐ MWRA eSMART ☐ Other

State where samples were collected: MA

Data Format
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☐ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other
* SURCHARGE APPLIES

PHOENIX
Environmental Laboratories, Inc.

Monday, April 22, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGE
SDG ID: GCC96467
Sample ID#s: CC96467 - CC96469

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

April 22, 2019

SDG I.D.: GCC96467

Project ID: PATRIOT BEVERAGE

Client Id	Lab Id	Matrix
EFFLUENT 2 C39-1896	CC96467	WASTE WATER
RECEIVING WATER 2 C39-1897	CC96468	WASTE WATER
EFFLUENT GRAB 2	CC96469	WASTE WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		04/17/19	7:00
Location Code:	NEB	Received by:	LB	04/17/19	16:56
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22458				

Laboratory Data

SDG ID: GCC96467
Phoenix ID: CC96467

Project ID: PATRIOT BEVERAGE
Client ID: EFFLUENT 2 C39-1896

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	0.37	0.05	mg/L	1	04/19/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller

Phyllis Shiller, Laboratory Director
April 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		04/17/19	7:00
Location Code:	NEB	Received by:	LB	04/17/19	16:56
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22458				

Laboratory Data

SDG ID: GCC96467
Phoenix ID: CC96468

Project ID: PATRIOT BEVERAGE
Client ID: RECEIVING WATER 2 C39-1897

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	04/19/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller

Phyllis Shiller, Laboratory Director
April 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 22, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		04/17/19	7:00
Location Code:	NEB	Received by:	LB	04/17/19	16:56
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22458				

Laboratory Data

SDG ID: GCC96467
Phoenix ID: CC96469

Project ID: PATRIOT BEVERAGE
Client ID: EFFLUENT GRAB 2

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.03	0.02	mg/L	1	04/17/19 20:08	O	SM4500CLG-97
pH	8.34	1.00	pH Units	1	04/18/19 05:07	RWR/KDB	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
April 22, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

April 22, 2019

QA/QC Data

SDG I.D.: GCC96467

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 475341 (pH), QC Sample No: CC96605 (CC96469)													
pH			10.35	10.30	0.50	97.6						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 475319 (mg/L), QC Sample No: CC95775 (CC96467, CC96468)													
Ammonia as Nitrogen	BRL	0.05	0.17	0.17	NC	98.5			102			90 - 110	20
QA/QC Batch 475245 (mg/L), QC Sample No: CC95995 (CC96469)													
Chlorine Residual	BRL	0.02	2.09	2.09	0	105							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
April 22, 2019

Monday, April 22, 2019

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCC96467 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

April 22, 2019 SDG I.D.: GCC96467

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

PHOENIX Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 4.1 Pg of

Data Delivery (check one):
☐ Fax #: WOID
☒ Email: kimberly.wills@gza.com
Format: ☐ Excel ☐ Pdf ☐ Gis Key

Customer: New England Bioassay
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages (MA)
Report to: Kim Wills
Invoice to: Kim Wills

Project P.O: 22458
Phone #: 860-643-9560
Fax #: 860-646-7169

Client Sample - Information - Identification

Sampler's Signature _____ Date _____

Matrix Code:
DW=drinking water **WW**=wastewater **S**=soil/solid **O**=other
GW=groundwater **SL**=sludge **A**=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia (0.1 mg/L)	pH (–)	Total Residual Chlorine (0.02 mg/L)	Soil VOA Vials [ ] methanol [ ] Sod Bisulfate	GL Soil container ( ) oz	PL As is 250 ml	PL As is 120ml	GL Amber 250ml [ ] As is [ ] H2SO4	PL As is 1000ml	PL H2SO4 [X] 250ml [ ] 1000ml	PL HNO3 [ ] 250ml [ ] 1000ml	PL NaOH 250ml	Bacteria Bottle
160407	Effluent-2 C39-1896	WW	4/17/19	0700-0700	X								1				
160408	Receiving Water-2 C39-1897	O	4/17/19	0630	X								1				
160409	Effluent Grab - 2		4/17/19	0700		X	X			1							

Relinquished by:	Accepted by:	Date:	Time:
		4/17/19	2:53
	TF	4/17/19	10:56

Comments, Special Requirements or Regulations:

Please see detection limits (MLs) listed next to each parameter above

Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

* Surcharge Applies

Requirements for CT
☐ Res. Criteria
☐ GW Protection
☐ GA Mobility
☐ GB Mobility
☐ SW Protection
☐ Res. Vol.
☐ Ind. Vol.

Requirements for MA
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MCP Certification
☐ Other

PHOENIX
Environmental Laboratories, Inc.

Thursday, April 25, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES MA
SDG ID: GCC98583
Sample ID#s: CC98583 - CC98585

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

April 25, 2019

SDG I.D.: GCC98583

Project ID: PATRIOT BEVERAGES MA

Client Id	Lab Id	Matrix
EFFLUENT-3 C39-1911	CC98583	WASTE WATER
RECEIVING WATER-3 C39-1912	CC98584	WASTE WATER
EFFLUENT GRAB-3	CC98585	WASTE WATER

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 25, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		04/19/19	7:00
Location Code:	NEB	Received by:	SW	04/19/19	15:50
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22458				

Laboratory Data

SDG ID: GCC98583
Phoenix ID: CC98583

Project ID: PATRIOT BEVERAGES MA
Client ID: EFFLUENT-3 C39-1911

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	0.07	0.05	mg/L	1	04/25/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
April 25, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 25, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		04/19/19	6:30
Location Code:	NEB	Received by:	SW	04/19/19	15:50
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22458				

Laboratory Data

SDG ID: GCC98583
Phoenix ID: CC98584

Project ID: PATRIOT BEVERAGES MA
Client ID: RECEIVING WATER-3 C39-1912

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	0.38	0.10	mg/L	2	04/25/19	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
April 25, 2019
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

April 25, 2019

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		04/19/19	
Location Code:	NEB	Received by:	SW	04/19/19	15:50
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22458				

Laboratory Data

SDG ID: GCC98583
Phoenix ID: CC98585

Project ID: PATRIOT BEVERAGES MA
Client ID: EFFLUENT GRAB-3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	< 0.02	0.02	mg/L	1	04/19/19 18:18	O	SM4500CLG-97
pH	8.21	1.00	pH Units	1	04/20/19 00:57	RR/EG	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
April 25, 2019
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QA/QC Report

April 25, 2019

QA/QC Data

SDG I.D.: GCC98583

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 475740 (pH), QC Sample No: CC97893 (CC98585)													
pH			6.07	6.01	1.00	109						85 - 115	20
QA/QC Batch 476041 (mg/L), QC Sample No: CC98257 (CC98583, CC98584)													
Ammonia as Nitrogen	BRL	0.05	0.24	0.24	NC	99.6			101			90 - 110	20
QA/QC Batch 475623 (mg/L), QC Sample No: CC98090 (CC98585)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	107							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
April 25, 2019

Thursday, April 25, 2019

Criteria: None

State: CT

Sample Criteria Exceedances Report

GCC98583 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

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ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

April 25, 2019 SDG I.D.: GCC98583

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

PHOENIX *Environmental Laboratories, Inc.*

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

WCIP
Temp 1.2 Pg ___ of ___

Data Delivery (check one):
☐ Fax #: ____
☒ Email: kimberly.wills@gza.com
Format: ☐ Excel ☐ Pdf ☐ Gis Key

Customer: New England Bioassay
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages (MA)
Report to: Kim Wills
Invoice to: Kim Wills

Project P.O: 22458
Phone #: 860-643-9560
Fax #: 860-646-7169

Client Sample - Information - Identification

Sampler's Signature ____ Date ____

Matrix Code:
DW=drinking water WW=wastewater S=soil/solid O=other
GW=groundwater SL=sludge A=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia (0.1 mg/L)	pH (-)	Total Residual Chlorine (0.02 mg/L)	Soil VOA Vials [ ] methanol [ ] Sod Bisulfate	GL Soil container ( ) oz	PL As is 250 ml	PL As is 120ml	GL Amber 250ml	PL As is 1000ml	PL H2SO4 [X] 250ml [ ] 1000ml	PL HNO3 [ ] 250ml [ ] 1000ml	PL NaOH 250ml	Bacteria Bottle
98583	Effluent-3 C39-1911	WW	4/18-19/19	0700-0700	X									1			
98584	Receiving Water-3 C39-1912	O	4/19/19	0630	X									1			
98585	Effluent Grab - 3					X	X			1							

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	4-19-19	1530
[signature]	[signature]	4-19-19	1550

Comments, Special Requirements or Regulations:

Please see detection limits (MLs) listed next to each parameter above

Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

* Surcharge Applies

Requirements for CT
☐ Res. Criteria
☐ GW Protection
☐ GA Mobility
☐ GB Mobility
☐ SW Protection
☐ Res. Vol.
☐ Ind. Vol.

Requirements for MA
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MCP Certification
☐ Other

SAMPLE RECEIPT CHEMISTRY
&
CHAIN OF CUSTODY DOCUMENTS

NEW ENGLAND BIOASSAY - INITIAL CHEMISTRY DATA

PERMITTEE: Patriot Beverages

NEB JOB # 05.0044697.00

DATE RECEIVED	4/15/19		4/17/19		4/19/19	
SAMPLE TYPE:	EFF #1	BROOK #1	EFF #2	BROOK #2	EFF #3	BROOK #3
COC #	C39-1883	C39-1884	C39-1896	C39-1897	C39-1911	C39-1912
pH (SU)	8.0	6.8	7.7	7.1	7.9	6.9
Temperature (^{o}C)	3.6	2.5	3.8	4.1	5.8	3.7
Dissolved Oxygen (mg/L)	8.3	9.5	10.4	9.8	10.7	9.8
Conductivity (µmhos)	1,556	167	1,623	217	1,680	233
Salinity (ppt)	<1	<1	<1	<1	<1	<1
TRC - DPD (mg/L)	0.015	0.014	0.042	<0.001	0.012	0.004
TRC - Amperometric (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A
Hardness (mg/L as $CaCO_3$)	178	26	174	36	164	38
Alkalinity (mg/l as $CaCO_3$)	485	15	465	20	440	20
Tech Initials	MM	MM	CH	CH	PD	PD

NOTE: NA = NOT APPLICABLE

Data Reviewed By: _____ Date Reviewed: 5/8/19

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set #1

EFFLUENT

Sampler: Jim Drapeau
Title: Chief Operator, WWTP
Facility: Patriot Beverages

Sampling Method: X **Composite**
Sample ID: OUTFALL 001
Start Date: 4/14/19 Time: 0600
End Date: 4/15/19 Time: 0600

Sampling Method: X **Grab** (for pH and TRC only X)
Date Collected: 4/15/19
Time Collected: 0600

Sample Type:
___ Prechlorinated
___ Dechlorinated
X Unchlorinated
___ Chlorinated

RECEIVING WATER

Sampler: Jim Drapeau
Title: Chief, Wastewater Op.
Facility: Patriot Beverages

Sampling Method: X Grab
Sample ID: Reedy Meadow Brook
Date Collected: 4/15/19
Time Collected: 0530

Received
ON ICE

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Date: 4/15/19	Time: 0845
Received By:	Date: 4/15/19	Time: 0845
Relinquished By:	Date: 4/15/19	Time: 1015
Received By:	Date: 4/15/19	Time: 1020

Optional Information

Purchase Order # to reference on invoice: 17914

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 3.6 °C
Temperature of Receiving Water Upon Receipt at Lab: 2.5 °C

Effluent COC# C39-~~1884~~ 1883
Receiving Water COC# C39-1884

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set #2

EFFLUENT

Sampler: Jim Dawson

Title: Chief Opr. WWTP

Facility: Patriot Beverages

Sampling Method: X **Composite**

Sample ID: OUTFALL001

Start Date: 4/16/19 Time: 0700

End Date: 4/17/19 Time: 0700

Sampling Method: X **Grab** (for pH and TRC only X)

Date Collected: 4/17/19

Time Collected: 0700

Sample Type:

___ Prechlorinated

___ Dechlorinated

X Unchlorinated

___ Chlorinated

RECEIVING WATER

Sampler: Jim Dawson

Title: Chief Opr. WWTP

Facility: Patriot Beverages

Sampling Method: X Grab

Sample ID: Reedy Meadow Brook

Date Collected: 4/17/19

Time Collected: 0630

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Date: 4/17/19	Time: 0830
Received By:	Date: 4/17/19	Time: 0830
Relinquished By:	Date: 4/17/19	Time: 1015
Received By:	Date: 4/17/19	Time: 1015

Optional Information

Purchase Order # to reference on invoice: 17914

Received
ON ICE

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 3.8 °C

Temperature of Receiving Water Upon Receipt at Lab: 4.1 °C

Effluent COC# C39-1896

Receiving Water COC# C39-1897

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

EFFLUENT Sample Set #3

Sampler: Jim Drapeau
Title: Chief Oper WWTP
Facility: Patriot Beverages

Sampling Method: X **Composite**
Sample ID: OUTFALL001
Start Date: 4/18/19 Time: 0700
End Date: 4/19/19 Time: 0700

Sampling Method: X **Grab** (for pH and TRC only X)
Date Collected: 4/19/19
Time Collected: 0700

Sample Type:
___ Prechlorinated
___ Dechlorinated
X Unchlorinated
___ Chlorinated

RECEIVING WATER

Sampler: Jim Drapeau
Title: Chief Oper WWTP
Facility: Patriot Beverages

Sampling Method: X Grab
Sample ID: Reedy Meadow Brook
Date Collected: 4/19/19
Time Collected: 0630

Received ON ICE

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:	Date: 4/19/19	Time: 0830
Received By:	Date: 4-19-19	Time: 0830
Relinquished By:	Date: 4-19-19	Time: 1055
Received By:	Date: 4-19-19	Time: 1055

Optional Information

Purchase Order # to reference on invoice: 17914

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 5.8 °C
Temperature of Receiving Water Upon Receipt at Lab: 3.7 °C

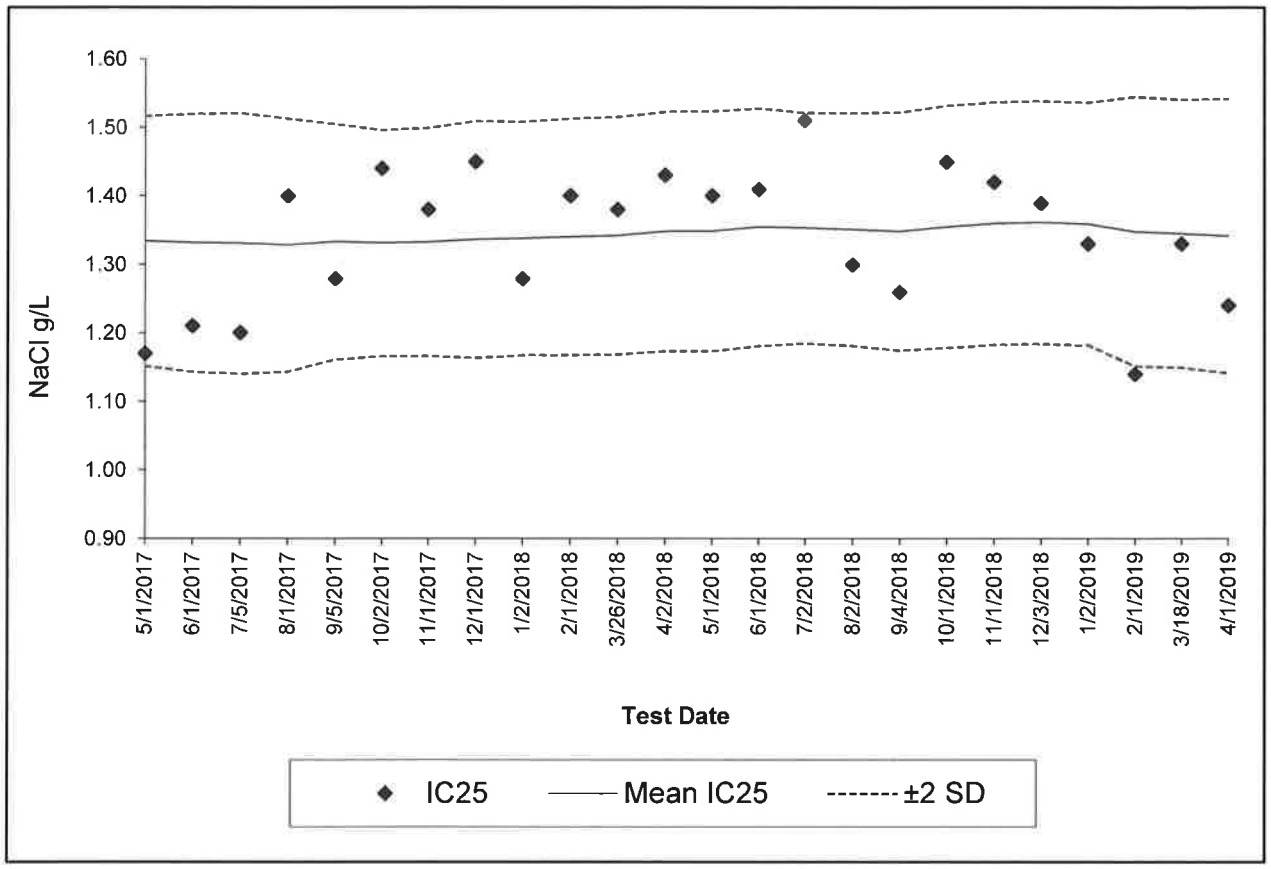
Effluent COC# C39-1911
Receiving Water COC# C39-1912

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

REFERENCE TOXICANT CHARTS

New England Bioassay

Reference Toxicant Data: Sodium chloride (NaCl) *Pimephales promelas* 7-day Chronic Growth IC_{25}



Test ID	Date	IC_{25}	Mean IC_{25}	STD	-2STD	+2STD	Avg. CV	Growth PMSD (%)	Avg. PMSD (%)
17-617	5/1/2017	1.17	1.33	0.09	1.15	1.52	0.07	10.74	9.95
17-765	6/1/2017	1.21	1.33	0.09	1.14	1.52	0.07	7.41	9.80
17-973	7/5/2017	1.20	1.33	0.09	1.14	1.52	0.07	10.39	9.83
17-1147	8/1/2017	1.40	1.33	0.09	1.14	1.51	0.07	11.35	9.91
17-1318	9/5/2017	1.28	1.33	0.09	1.16	1.50	0.06	13.74	10.11
17-1522	10/2/2017	1.44	1.33	0.08	1.17	1.50	0.06	10.36	10.12
17-1696	11/1/2017	1.38	1.33	0.08	1.17	1.50	0.06	9.27	10.08
17-1809	12/1/2017	1.45	1.34	0.09	1.16	1.51	0.06	26.17	10.78
18-11	1/2/2018	1.28	1.34	0.09	1.17	1.51	0.06	6.16	10.59
18-184	2/1/2018	1.40	1.34	0.09	1.17	1.51	0.06	10.52	10.51
18-416	3/26/2018	1.38	1.34	0.09	1.17	1.51	0.06	9.14	10.49
18-472	4/2/2018	1.43	1.35	0.09	1.17	1.52	0.06	6.25	10.57
18-608	5/1/2018	1.40	1.35	0.09	1.17	1.52	0.06	11.80	10.88
18-745	6/1/2018	1.41	1.35	0.09	1.18	1.53	0.06	13.87	11.08
18-919	7/2/2018	1.51	1.35	0.08	1.19	1.52	0.06	12.86	10.83
18-1104	8/2/2018	1.30	1.35	0.08	1.18	1.52	0.06	9.21	10.63
18-1316	9/4/2018	1.26	1.35	0.09	1.18	1.52	0.06	11.89	10.84
18-1512	10/1/2018	1.45	1.36	0.09	1.18	1.53	0.06	8.61	10.76
18-1626	11/1/2018	1.42	1.36	0.09	1.18	1.54	0.06	9.48	10.87
18-1757	12/3/2018	1.39	1.36	0.09	1.18	1.54	0.06	9.70	10.95
19-9	1/2/2019	1.33	1.36	0.09	1.18	1.54	0.07	8.91	11.06
19-178	2/1/2019	1.14	1.35	0.10	1.15	1.54	0.07	6.84	10.94
19-376	3/18/2019	1.33	1.35	0.10	1.15	1.54	0.07	15.36	10.73
19-404	4/1/2019	1.24	1.34	0.10	1.14	1.54	0.07	7.57	10.73

National 75th Percentile and 90th Percentile CV Averages for Fathead Growth IC25 (EPA 833-R-00-003): 0.38 - 0.45
PMSD Upper and Lower Bounds for Fathead Growth (EPA-821-R-02-013): 12% - 30%